

Quiz 5

- 1) Find the vertex and x and y intercepts:
 $f(x) = -x^2 + 8x - 7$
- 2) An apple orchard produces a profit of \$40 a tree when planted with 1000 trees. Owing to overcrowding, the profit per tree (for each tree in the orchard) is reduced by 2 cents for each additional tree planted. How many trees should be planted in order to maximize the total profit from the orchard?
- 3) The perimeter of a rectangle is 12m. Find the dimensions for which the diagonal will be as short as possible.
- 4) Minimize S given that $4x - y = 12$
 $S = 2x^2 + 5xy - y^2$
- 5) Let $f(x) = 2x - 3$ and $g(x) = x^2 + 1$. Find $(f - g)(x)$
- 6) Find $f(g(x))$ and $g(f(x))$
 $f(x) = 3x + 2$ $g(x) = x^2 - 8$